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EXAMINER

SOBUTKA, PHILIP

ART UNIT PAPER NUMBER

2618

DATE MAILED: 12/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/607,868	Applicant(s) ZAFAR ET AL.	
	Examiner Philip J. Sobutka	Art Unit 2618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 September 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 4-7,9-16,18-20 and 28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 4-7,9-16,18-20 and 28 is/are rejected.
- 7) ☒ Claim(s) 13,15,18 and 20 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objection – Duplicate Claims

1. Claim 13 is a DUPLICATE of claim 18.
2. Claim 15 is a DUPLICATE of claim 20.
3. Applicant is advised that should claims 13 and 15 be found allowable, claims 18 and 20, respectively, will be objected to under 37 CFR 1.75 as being substantial duplicates thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Specification

4. The amendment filed September 29, 2006 is objected to under 35 U.S.C. 132(a) because it introduces new matter into the disclosure. 35 U.S.C. 132(a) states that no amendment shall introduce new matter into the disclosure of the invention. The added material which is not supported by the original disclosure is as follows: newly added paragraph 54, in particular: the specific frequency bands used by satellite radio and AM and FM providers, that direct satellite radio signals are circularly polarized while retransmitted terrestrial satellite radio signal are vertically polarized satellite and the design of AM FM and satellite radio antennas.

Applicant is required to cancel the new matter in the reply to this Office Action.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. Claims 4-7,9-16,18-20,28 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Specifically in claim 28, that the AM/FM antenna is configured for vertically polarized signals, that the SDARS antenna is configured for circularly polarized direct transmissions and vertically polarized terrestrial retransmissions, and the AM/FM cable for vertically polarized signals, while the Satellite cable is for both circularly polarized direct transmissions and vertically polarized terrestrial retransmissions.

Double Patenting

7. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422

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F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

8. Claim 28 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 23 of U.S. Patent No. 6,806,838 in view of Du (US 6,809,686). Although the conflicting claims are not identical, they are not patentably distinct from each other because claim 23 requires more separate cable connections than required in the instant claim. It would have been obvious to one of ordinary skill in the art that eliminating the extra cables would reduce cost; therefore it would have been obvious to only require the connections of the instant claim. The claim also lacks a teaching of the satellite antenna being configured for receiving circularly polarized SDARS radio signals in a direct transmission SDARS frequency band and suitable for receiving vertically polarized radio signals in a terrestrial retransmission SDARS frequency band,

Du teaches that a SDARS antenna must be configured for circular polarization as well as retransmitted vertical polarizations (*Du teaches a satellite antenna arrangement that provides SDARS reception for both direct satellite and a sufficient vertical profile for terrestrial retransmitted satellite signals for example on column 1, lines 30-35, 53-58 and column 2, lines 3-10. Note that Du teaches that the SDARS antenna configured for direct and terrestrially retransmitted signal can be a micro strip,*

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i.e. patch or quadrafililar antenna see for example column 1, lines 53-60). It would have been obvious to one of ordinary skill in the art to modify the claim for direct and retransmitted SDARS satellite signals as taught by Du in order to allow for the best possible reception.

9. Claim 4 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 23 of U.S. Patent No. 6,806,838. Although the conflicting claims are not identical, they are not patentably distinct from each other because the instant claim requires the antenna to be a patch antenna. Official Notice is taken that patch antennas are well known in the art. It would have been obvious to one of ordinary skill in the art to modify claim 23 to use a patch antenna in order to utilize a very low profile antenna. Claim 23 also requires more separate cable connections than required in the instant claim. It would have been obvious to one of ordinary skill in the art that eliminating the extra cables would reduce cost, therefore it would have been obvious to only require the connections of the instant claim. The instant claim also requires the satellite signal to be SDARS. Official Notice is taken that satellite audio is very popular. Therefore it would have been obvious to one of ordinary skill to modify claim 24 to receive SDARS signals in order to allow users to receive this popular band. The claim also lacks also lacks a teaching of the satellite antenna being configured for receiving circularly polarized SDARS radio signals in a direct transmission SDARS frequency band and suitable for receiving vertically polarized radio signals in a terrestrial retransmission SDARS frequency band,

Du teaches that a SDARS antenna must be configured for circular polarization as well as retransmitted vertical polarizations (*Du teaches a satellite antenna arrangement that provides SDARS reception for both direct satellite and a sufficient vertical profile for terrestrial retransmitted satellite signals for example on column 1, lines 30-35, 53-58 and column 2, lines 3-10. Note that Du teaches that the SDARS antenna configured for direct and terrestrially retransmitted signal can be a micro strip, i.e. patch or quadrafilar antenna see for example column 1, lines 53-60*). It would have been obvious to one of ordinary skill in the art to modify the claim for direct and retransmitted SDARS satellite signals as taught by Du in order to allow for the best possible reception.

10. Claims 5 and 6 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 3 of U.S. Patent No. 6,806,838. Although the conflicting claims are not identical, they are not patentably distinct from each other because, while the quadrafilar helix antennas is a coupled loop antenna, the instant claim also differs in requiring satellite and AM/FM receivers. It would have been obvious to one of ordinary skill in the art to equip the antenna arrangement of claim 3 in order to actually use the arrangement. As to the use of AM/FM note that these are very popular bands, therefore it would have been obvious to one of ordinary skill in the art to equip the multi band terrestrial antenna for AM and FM in order to allow a user to receive these popular bands. The claim also lacks also lacks a teaching of the satellite antenna being configured for receiving circularly polarized SDARS radio signals in a

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direct transmission SDARS frequency band and suitable for receiving vertically polarized radio signals in a terrestrial retransmission SDARS frequency band,

Du teaches that a SDARS antenna must be configured for circular polarization as well as retransmitted vertical polarizations (*Du teaches a satellite antenna arrangement that provides SDARS reception for both direct satellite and a sufficient vertical profile for terrestrial retransmitted satellite signals for example on column 1, lines 30-35, 53-58 and column 2, lines 3-10. Note that Du teaches that the SDARS antenna configured for direct and terrestrially retransmitted signal can be a micro strip, i.e. patch or quadrafilair antenna see for example column 1, lines 53-60*). It would have been obvious to one of ordinary skill in the art to modify the claim for direct and retransmitted SDARS satellite signals as taught by Du in order to allow for the best possible reception.

11. Claim 7 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 4 of U.S. Patent No. 6,806,838. Although the conflicting claims are not identical, they are not patentably distinct from each other because, while they both claim the 20-degree angle over obstructions, the instant claim also differs in requiring satellite and AM/FM receivers. It would have been obvious to one of ordinary skill in the art to equip the antenna arrangement of claim 4 in order to actually use the arrangement. As to the use of AM/FM note that these are very popular bands, therefore it would have been obvious to one of ordinary skill in the art to equip the multi band terrestrial antenna for AM and FM in order to allow a user to receive

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these popular bands. The claim also lacks also lacks a teaching of the satellite antenna being configured for receiving circularly polarized SDARS radio signals in a direct transmission SDARS frequency band and suitable for receiving vertically polarized radio signals in a terrestrial retransmission SDARS frequency band;

Du teaches that a SDARS antenna must be configured for circular polarization as well as retransmitted vertical polarizations (*Du teaches a satellite antenna arrangement that provides SDARS reception for both direct satellite and a sufficient vertical profile for terrestrial retransmitted satellite signals for example on column 1, lines 30-35, 53-58 and column 2, lines 3-10. Note that Du teaches that the SDARS antenna configured for direct and terrestrially retransmitted signal can be a micro strip, i.e. patch or quadrafilair antenna see for example column 1, lines 53-60*). It would have been obvious to one of ordinary skill in the art to modify the claim for direct and retransmitted SDARS satellite signals as taught by Du in order to allow for the best possible reception.

12. Claim 9 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 23 of U.S. Patent No. 6,806,838. Although the conflicting claims are not identical, they are not patentably distinct from each other because, while they both claim the low noise amplifier, claim 23 requires more separate cable connections than required in the instant claim. It would have been obvious to one of ordinary skill in the art that eliminating the extra cables would reduce cost, therefore it would have been obvious to only require the connections of the instant claim. The instant claim also requires the satellite signal to be SDARS. Official Notice is taken that

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satellite audio is very popular. Therefore it would have been obvious to one of ordinary skill to modify claim 24 to receive SDARS signals in order to allow users to receive this popular band. The claim also lacks a teaching of the satellite antenna being configured for receiving circularly polarized SDARS radio signals in a direct transmission SDARS frequency band and suitable for receiving vertically polarized radio signals in a terrestrial retransmission SDARS frequency band,

Du teaches that a SDARS antenna must be configured for circular polarization as well as retransmitted vertical polarizations (*Du teaches a satellite antenna arrangement that provides SDARS reception for both direct satellite and a sufficient vertical profile for terrestrial retransmitted satellite signals for example on column 1, lines 30-35, 53-58 and column 2, lines 3-10. Note that Du teaches that the SDARS antenna configured for direct and terrestrially retransmitted signal can be a micro strip, i.e. patch or quadrafilair antenna see for example column 1, lines 53-60*). It would have been obvious to one of ordinary skill in the art to modify the claim for direct and retransmitted SDARS satellite signals as taught by Du in order to allow for the best possible reception.

13. Claim 10 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 6 of U.S. Patent No. 6,806,838. Although the conflicting claims are not identical, they are not patentably distinct from each other because, while they both claim the structure being one of an auto, RV, house, building, train and plane, the instant claim also differs in requiring satellite and AM/FM receivers. It would have been obvious to one of ordinary skill in the art to equip the antenna

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arrangement of claim 6 in order to actually use the arrangement. As to the use of AM/FM note that these are very popular bands, therefore it would have been obvious to one of ordinary skill in the art to equip the multi band terrestrial antenna for AM and FM in order to allow a user to receive these popular bands. The claim also lacks also lacks a teaching of the satellite antenna being configured for receiving circularly polarized SDARS radio signals in a direct transmission SDARS frequency band and suitable for receiving vertically polarized radio signals in a terrestrial retransmission SDARS frequency band,

Du teaches that a SDARS antenna must be configured for circular polarization as well as retransmitted vertical polarizations (*Du teaches a satellite antenna arrangement that provides SDARS reception for both direct satellite and a sufficient vertical profile for terrestrial retransmitted satellite signals for example on column 1, lines 30-35, 53-58 and column 2, lines 3-10. Note that Du teaches that the SDARS antenna configured for direct and terrestrially retransmitted signal can be a micro strip, i.e. patch or quadrafilair antenna see for example column 1, lines 53-60*). It would have been obvious to one of ordinary skill in the art to modify the claim for direct and retransmitted SDARS satellite signals as taught by Du in order to allow for the best possible reception.

14. Claim 11 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 5 of U.S. Patent No. 6,806,838. Although the conflicting claims are not identical, they are not patentably distinct from each other because, while they both claim the structure being the roof of an automobile, the instant

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claim also differs in requiring satellite and AM/FM receivers. It would have been obvious to one of ordinary skill in the art to equip the antenna arrangement of claim 5 in order to actually use the arrangement. As to the use of AM/FM note that these are very popular bands, therefore it would have been obvious to one of ordinary skill in the art to equip the multi band terrestrial antenna for AM and FM in order to allow a user to receive these popular bands. The claim also lacks a teaching of the satellite antenna being configured for receiving circularly polarized SDARS radio signals in a direct transmission SDARS frequency band and suitable for receiving vertically polarized radio signals in a terrestrial retransmission SDARS frequency band,

Du teaches that a SDARS antenna must be configured for circular polarization as well as retransmitted vertical polarizations (*Du teaches a satellite antenna arrangement that provides SDARS reception for both direct satellite and a sufficient vertical profile for terrestrial retransmitted satellite signals for example on column 1, lines 30-35, 53-58 and column 2, lines 3-10. Note that Du teaches that the SDARS antenna configured for direct and terrestrially retransmitted signal can be a micro strip, i.e. patch or quadrafilair antenna see for example column 1, lines 53-60*). It would have been obvious to one of ordinary skill in the art to modify the claim for direct and retransmitted SDARS satellite signals as taught by Du in order to allow for the best possible reception.

15. Claim 12 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 5 of U.S. Patent No. 6,806,838. Although the conflicting claims are not identical, they are not patentably distinct from each other

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because, the instant claim differs in being attached to the fender rather than the roof. It would have been obvious to one of ordinary skill in the art to modify claim 5 to mount the antenna on the fender if the vehicle were very high and the mounted antenna might be in danger of being dislodged in a low parking garage. The instant claim also differs in requiring satellite and AM/FM receivers. It would have been obvious to one of ordinary skill in the art to equip the antenna arrangement of claim 5 in order to actually use the arrangement. As to the use of AM/FM note that these are very popular bands, therefore it would have been obvious to one of ordinary skill in the art to equip the multi band terrestrial antenna for AM and FM in order to allow a user to receive these popular bands. The claim also lacks also lacks a teaching of the satellite antenna being configured for receiving circularly polarized SDARS radio signals in a direct transmission SDARS frequency band and suitable for receiving vertically polarized radio signals in a terrestrial retransmission SDARS frequency band,

Du teaches that a SDARS antenna must be configured for circular polarization as well as retransmitted vertical polarizations (*Du teaches a satellite antenna arrangement that provides SDARS reception for both direct satellite and a sufficient vertical profile for terrestrial retransmitted satellite signals for example on column 1, lines 30-35, 53-58 and column 2, lines 3-10. Note that Du teaches that the SDARS antenna configured for direct and terrestrially retransmitted signal can be a micro strip, i.e. patch or quadrafilair antenna see for example column 1, lines 53-60*). It would have been obvious to one of ordinary skill in the art to modify the claim for direct and

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retransmitted SDARS satellite signals as taught by Du in order to allow for the best possible reception.

16. Claims 13 and 18 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 5 of U.S. Patent No. 6,806,838.

Although the conflicting claims are not identical, they are not patentably distinct from each other because, while they both claim the satellite antenna be mounted uppermost, the instant claim differs in requiring satellite and AM/FM receivers. It would have been obvious to one of ordinary skill in the art to equip the antenna arrangement of claim 5 in order to actually use the arrangement. As to the use of AM/FM note that these are very popular bands, therefore it would have been obvious to one of ordinary skill in the art to equip the multi band terrestrial antenna for AM and FM in order to allow a user to receive these popular bands. The claim also lacks a teaching of the satellite antenna being configured for receiving circularly polarized SDARS radio signals in a direct transmission SDARS frequency band and suitable for receiving vertically polarized radio signals in a terrestrial retransmission SDARS frequency band,

Du teaches that a SDARS antenna must be configured for circular polarization as well as retransmitted vertical polarizations (*Du teaches a satellite antenna arrangement that provides SDARS reception for both direct satellite and a sufficient vertical profile for terrestrial retransmitted satellite signals for example on column 1, lines 30-35, 53-58 and column 2, lines 3-10. Note that Du teaches that the SDARS antenna configured for direct and terrestrially retransmitted signal can be a micro strip, i.e. patch or quadrafilar antenna see for example column 1, lines 53-60*). It would have

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been obvious to one of ordinary skill in the art to modify the claim for direct and retransmitted SDARS satellite signals as taught by Du in order to allow for the best possible reception.

17. Claim 14 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 23 of U.S. Patent No. 6,806,838. Although the conflicting claims are not identical, they are not patentably distinct from each other because claim 23 requires more separate cable connections than required in the instant claim. It would have been obvious to one of ordinary skill in the art that eliminating the extra cables would reduce cost, therefore it would have been obvious to only require the connections of the instant claim. The instant claim also requires the satellite be mounted lower than the terrestrial. It would have been obvious to one of ordinary skill in the art that mounting the antenna as low as possible would reduce aerodynamic drag on the assembly. The claim also lacks a teaching of the satellite antenna being configured for receiving circularly polarized SDARS radio signals in a direct transmission SDARS frequency band and suitable for receiving vertically polarized radio signals in a terrestrial retransmission SDARS frequency band,

Du teaches that a SDARS antenna must be configured for circular polarization as well as retransmitted vertical polarizations (*Du teaches a satellite antenna arrangement that provides SDARS reception for both direct satellite and a sufficient vertical profile for terrestrial retransmitted satellite signals for example on column 1, lines 30-35, 53-58 and column 2, lines 3-10. Note that Du teaches that the SDARS antenna configured for direct and terrestrially retransmitted signal can be a micro strip,*

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i.e. patch or quadrafilar antenna see for example column 1, lines 53-60). It would have been obvious to one of ordinary skill in the art to modify the claim for direct and retransmitted SDARS satellite signals as taught by Du in order to allow for the best possible reception.

18. Claims 15 and 20 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 38 of U.S. Patent No. 6,806,838. Although the conflicting claims are not identical, they are not patentably distinct from each other because, while they both claim retractable antennas, the instant claim also differs in requiring satellite and AM/FM receivers. It would have been obvious to one of ordinary skill in the art to equip the antenna arrangement of claim 3 in order to actually use the arrangement. As to the use of AM/FM note that these are very popular bands, therefore it would have been obvious to one of ordinary skill in the art to equip the multi band terrestrial antenna for AM and FM in order to allow a user to receive these popular bands. The claim also lacks a teaching of the satellite antenna being configured for receiving circularly polarized SDARS radio signals in a direct transmission SDARS frequency band and suitable for receiving vertically polarized radio signals in a terrestrial retransmission SDARS frequency band,

Du teaches that a SDARS antenna must be configured for circular polarization as well as retransmitted vertical polarizations (*Du teaches a satellite antenna arrangement that provides SDARS reception for both direct satellite and a sufficient vertical profile for terrestrial retransmitted satellite signals for example on column 1, lines 30-35, 53-58 and column 2, lines 3-10. Note that Du teaches that the SDARS*

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antenna configured for direct and terrestrially retransmitted signal can be a micro strip, i.e. patch or quadrafilar antenna see for example column 1, lines 53-60). It would have been obvious to one of ordinary skill in the art to modify the claim for direct and retransmitted SDARS satellite signals as taught by Du in order to allow for the best possible reception.

19. Claim 16 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 39 of U.S. Patent No. 6,806,838. Although the conflicting claims are not identical, they are not patentably distinct from each other because, while they both claim antennas retracting to within the structure, the instant claim also differs in requiring satellite and AM/FM receivers. It would have been obvious to one of ordinary skill in the art to equip the antenna arrangement of claim 3 in order to actually use the arrangement. As to the use of AM/FM note that these are very popular bands, therefore it would have been obvious to one of ordinary skill in the art to equip the multi band terrestrial antenna for AM and FM in order to allow a user to receive these popular bands. The claim also lacks also lacks a teaching of the satellite antenna being configured for receiving circularly polarized SDARS radio signals in a direct transmission SDARS frequency band and suitable for receiving vertically polarized radio signals in a terrestrial retransmission SDARS frequency band,

Du teaches that a SDARS antenna must be configured for circular polarization as well as retransmitted vertical polarizations (*Du teaches a satellite antenna arrangement that provides SDARS reception for both direct satellite and a sufficient vertical profile for terrestrial retransmitted satellite signals for example on column 1,*

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lines 30-35, 53-58 and column 2, lines 3-10. Note that Du teaches that the SDARS antenna configured for direct and terrestrially retransmitted signal can be a micro strip, i.e. patch or quadrafilair antenna see for example column 1, lines 53-60). It would have been obvious to one of ordinary skill in the art to modify the claim for direct and retransmitted SDARS satellite signals as taught by Du in order to allow for the best possible reception.

20. Claim 19 is rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claim 23 of U.S. Patent No. 6,806,838. Although the conflicting claims are not identical, they are not patentably distinct from each other because the instant claim does not add any restriction on relative mounting of the satellite antenna. Claim 23 requires more separate cable connections than required in the instant claim. It would have been obvious to one of ordinary skill in the art that eliminating the extra cables would reduce cost, therefore it would have been obvious to only require the connections of the instant claim. The instant claim also requires the satellite be mounted lower than the terrestrial. It would have been obvious to one of ordinary skill in the art that mounting the antenna as low a possible would reduce aerodynamic drag on the assembly. The claim also lacks also lacks a teaching of the satellite antenna being configured for receiving circularly polarized SDARS radio signals in a direct transmission SDARS frequency band and suitable for receiving vertically polarized radio signals in a terrestrial retransmission SDARS frequency band,

Du teaches that a SDARS antenna must be configured for circular polarization as well as retransmitted vertical polarizations (*Du teaches a satellite antenna*

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arrangement that provides SDARS reception for both direct satellite and a sufficient vertical profile for terrestrial retransmitted satellite signals for example on column 1, lines 30-35, 53-58 and column 2, lines 3-10. Note that Du teaches that the SDARS antenna configured for direct and terrestrially retransmitted signal can be a micro strip, i.e. patch or quadrafilar antenna see for example column 1, lines 53-60). It would have been obvious to one of ordinary skill in the art to modify the claim for direct and retransmitted SDARS satellite signals as taught by Du in order to allow for the best possible reception.

Claim Rejections - 35 USC § 103

21. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

22. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

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23. Claims 4-6,9,11,12,14-16,19,20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kielland (CA 2305860) in view of McGowan (WO 2001/33666) and in view of Du et al (US 6,809,686).

Consider claim 28. Kielland teaches a combined satellite and terrestrial antenna system for a structure, comprising:

An AM/FM antenna configured for receiving vertically polarized radio signals in the AM and FM frequency bands (*Kielland figures 1-6, item 9, described as an AM FM antenna on page 1, lines 8-12. Note that AM and FM signals are vertically polarized*) and mounted on a mounting assembly (*Kielland shows a mounting base assembly as item 1 in figures 1-6 and describes it on page 1, lines 12-26*);

an AM/FM receiver (*Kielland shows the AM FM receiver as item 12 in figures 1 and 2, described on page 2, lines 8-11*) coupled to the AM/FM antenna by an AM/FM cable (*Kielland shows the terrestrial signal cable as item 11 in figures 1 and 2, described on page 2, lines 8-11*) for receiving the vertically polarized AM/FM signals exclusively from the AM/FM antenna; and

While Kielland shows the terrestrial antenna, item 9, apparently going through the center of the satellite antenna item 2 (which would position the satellite antenna concentrically around the terrestrial antenna), Kielland lacks a clear teaching of the satellite antenna being concentrically mounted in respect to the terrestrial antenna. Note that Kielland teaches the satellite antenna being a quadrafilar helix antenna or patch antenna (*Kielland see page 1, lines 27-32*).

In a similar multi mode satellite and terrestrial antenna arrangement, McGowan teaches a satellite element being a quadrafilair helix or similar antenna concentrically mounted in relation to a terrestrial antenna (*McGowan teaches on page 7, lines 33- 37 that the satellite element is "positioned concentrically and externally to the terrestrial element, as shown in figure 4a, as item 410, which comprises elements 422,424,426 and 428. Note that the terrestrial antenna is shown as item 430, see also page 10, lines 13-20)*

McGowan teaches that a compact antenna arrangement is desirable because of limited mounting space and to reduce wind resistance when mounted on a moving vehicle and this constraint is fulfilled by the concentric arrangement (*McGowan teaches the desirability of the compact concentric arrangement on page 7, lines 8-16*).

Therefore it would have been obvious to one of ordinary skill in the art to modify Kielland to mount the satellite antenna concentrically in relation to the terrestrial antenna in order to reduce mount space and wind resistance as taught by McGowan.

Kielland also lacks a teaching of the satellite antenna being configured for receiving circularly polarized SDARS radio signals in a direct transmission SDARS frequency band and suitable for receiving vertically polarized radio signals in a terrestrial retransmission SDARS frequency band, the SDARS receiver coupled to the SDARS antenna by an SDARS/SAT/TER cable for receiving both the circularly polarized SDARS signals and the vertically polarized, terrestrially retransmitted SDAFIS signals exclusively from the SDARS antenna.

Du teaches that SDARS is growing in popularity and that a SDARS antenna must be configured for circular polarization as well as retransmitted vertical polarizations (*Du teaches a satellite antenna arrangement that provides SDARS reception for both direct satellite and a sufficient vertical profile for terrestrial retransmitted satellite signals for example on column 1, lines 30-35, 53-58 and column 2, lines 3-10. Note that Du teaches that the SDARS antenna configured for direct and terrestrially retransmitted signal can be a micro strip, i.e. patch or quadrafilar antenna see for example column 1, lines 53-60*). It would have been obvious to one of ordinary skill in the art to modify the satellite antenna of Kielland for direct and retransmitted SDARS satellite signals as taught by Du in order to allow the user to listen to the popular satellite audio programming. Note that it would also be obvious to modify the receiver and cable in order to listen to the signals received by the SDARS antenna.

As to claim 4, Kielland in view of McGowan and Du teaches the satellite antenna comprises a patch antenna (*Note that Du teaches that the SDARS antenna configured for direct and terrestrially retransmitted signal can be a micro strip, i.e. patch or quadrafilar antenna see for example column 1, lines 53-60*).

As to claim 5, note that the quadrafilar helix of Kielland in view of McGowan and Du is composed of coupled helix wound loops (*Note that Du teaches that the SDARS antenna configured for direct and terrestrially retransmitted signal can be a micro strip, i.e. patch or quadrafilar antenna see for example column 1, lines 53-60. McGowan shows the coupled helix loops in figure 4a*)

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As to claim 6, note that the quadrafilar helix of Kielland in view of McGowan is composed of coupled helix wound loops (*Note that Du teaches that the SDARS antenna configured for direct and terrestrially retransmitted signal can be a micro strip, i.e. patch or quadrafilar antenna see for example column 1, lines 53-60. McGowan shows the coupled helix loops in figure 4a*).

As to claim 9, note that in the arrangement of Kielland in view of McGowan and in view of Du as applied to claim 28 to be used with SDARS, the satellite a satellite low noise amplifier (*Kielland shows the low noise amp as item 13 in figure 2, and describes it on page 2, lines 12-18*) with a first input would be connected to a first end of a satellite output, and the output of the low noise amplifier would be a SDARS/SAT/TER cable (*see Kielland figure 2, items 5, 7, as modified above*).

As to claim 11, Kielland teaches the structure being mounted on an automobile (*Kielland page 1, lines 3-7*). Kielland lacks a teaching of the antenna being mounted on the roof.

McGowan teaches mounting an antenna unit on the roof of a truck train, or other transportation vehicle (*McGowan shows the vehicle roofline as item 414 in figure 4, described in page 10, lines 24-26, and page 7, lines 1-12*). It would have been obvious to one of ordinary skill in the art to modify Kielland to mount the antenna on the roof of the vehicle as taught by McGowan in order to ensure that it got the most uninterrupted view of the sky possible on the vehicle.

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As to claim 12, Kielland teaches the structure being mounted on an automobile (Kielland page 1, lines 3-7). Kielland lacks a teaching of the antenna being mounted on the fender.

McGowan teaches mounting an antenna unit on the fender of a truck train, or other transportation vehicle (*McGowan teaches fender mounting on page 4, lines 27-28*). It would have been obvious to one of ordinary skill in the art to modify Kielland to mount the antenna on the fender of the vehicle as taught by McGowan in order to ensure that it would not be knocked off of the roof in low clearance garages or car ports.

As to claim 14 note that Kielland teaches the satellite antenna (*Kielland figures 1-6, item 2*) is mounted in a position lower than the terrestrial antenna (*Kielland figures 1-6, item 9*).

As to claims 15 and 20 (*Note the rejection of claims 15 and 20 as duplicate claims above*) note that Kielland teaches the terrestrial antenna being retractable (*Kielland see 2, lines 7-12*).

As to claim 16, note that Kielland teaches the terrestrial antenna retracts to a location within the structure (*Kielland see 2, lines 7-12*).

As to claim 19, Kielland in view of McGowan as applied to claim 1, lack a teaching of the satellite antenna being mounted at any position on the terrestrial antenna. It is first noted that clearly the mounting position of the satellite antenna relative to the terrestrial antenna is not a part of the essential novelty of the instant application. Similarly, neither Kielland nor McGowan disclose any special positing of the antennas, other than McGowan's teaching that it should be positioned around the

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terrestrial, i.e. concentrically. In fact Kielland goes to great pains to affirm that specifics of the arrangement, including type of antenna, or the overall shape of the mounting assembly could vary greatly (*Kielland see page 1, lines 12-15, 20-25, 27-31*). Therefore it would have been obvious to one of ordinary skill in the art to modify the arrangement of Kielland in view of McGowan to position the satellite antenna at any position on the terrestrial antenna, to accommodate any aerodynamic, or esthetic arrangement of parts.

24. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kielland in view of McGowan and in view of Du and further in view of Routtenberg et al (US 2002/0049717).

As to claim 10 Kielland in view of McGowan and in view of Du as applied to claim 28 above, teaches the antenna being mounted on a structure comprising an automobile (*Kielland see page 1, lines 3-5*).

Kielland lacks a teaching of the structure being selected from the group consisting of a train and an aircraft and a recreational vehicle,

McGowan teaches mounting a combined satellite and terrestrial antenna assembly on a train or other type of transportation (*McGowan see page 10, lines 25-26*). It would have been obvious to one of ordinary skill in the art to modify Kielland to mount it on other forms of transport such as trains as taught by McGowan in order to allow the assembly to be marketed to various types of transportation users. As to the limitations regarding RV's and airplanes, Official Notice is taken that these are also popular types of transportation. Therefore it would likewise have been obvious to one of

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ordinary skill in the art to modify Kielland to mount the assembly on RV's and airplanes in order to further extend the potential market for the assembly to other types of transportation.

Kielland also lacks a teaching of the structure being selected from the group consisting of a house and a building.

Routtenberg notes that satellite radio is a large potential market, which would include potential users of satellite and AM/FM radios in their homes (*Routtennberg see paragraphs 14, and 15*). Therefore it would have been obvious to one of ordinary skill in the art to modify Kielland to install the antenna on homes and buildings in order to reach the potential market of home users of satellite radio as taught by Routtenberg.

25. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over Kielland in view of McGowan and in view of Du and further in view of King (US 6,538,612).

Consider claim 7. Kielland in view of McGowan and in view of Du as applied to claim 28, lack a teaching of the antenna assembly being mounted at a common location on the structure, such that the angle formed by the difference in height between the top of an obstruction and the height of the satellite antenna, and the distance from the obstruction and the combined concentrically mounted satellite and multi-band terrestrial antenna is less than 20 degrees.

King teaches that it is important when mounting satellite antennas that they are free of line of sight obstructions. (*King in figures 1, and 2 and on column 4, lines 21-30, teaches that objects and components must be located below an angle drawn from the*

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center of device up 20 degrees from the top of the roof). Therefore it would have been obvious to one of ordinary skill in the art to mount the antenna assembly of Kielland in view of McGowan and in view of Du such that an angle formed from the antenna and the top of an obstruction is less than 20 degrees as taught by King in order to reduce the effect of signal interference from any of the obstructions.

26. Claims 13 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kielland in view of McGowan and further in view of Terk et al (US 2003/0107520).

Note the rejection of claims 13 and 18 as duplicates above.

Consider claim 13. Kielland in view of McGowan as applied to claim 1 above, lack a teaching of the satellite antenna is mounted on the upper-most portion of the terrestrial antenna.

In a similar satellite and terrestrial antenna arrangement Terk teaches mounting a satellite antenna on the upper most portion of a terrestrial antenna (*Terk's satellite antenna is shown as item 74 in figure 4, and described as being mounted at the upper portion of the terrestrial antenna in paragraph 48*). It would have been obvious to one of ordinary skill in the art to modify Kielland in view of McGowan to mount the antenna at the uppermost portion as taught by Terk in order to ensure that the satellite antenna had the best reception placement possible.

Response to Amendment

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27. Note that Applicant's amendments have not addressed all the objections regarding duplicate claims, as noted above.

28. Applicant's amendments have removed the rejections under 35 USC 112.

29. Applicant's arguments with respect to claims 4-7,9-16,18-20,28 have been considered but are moot in view of the new ground(s) of rejection.

30. **Regarding the double patenting rejections**, note that a secondary reference has now been added to the obvious type rejections regarding the use of an antenna for direct and terrestrially retransmitted signals. Note that Petros's claims are silent as to terrestrially retransmitted satellite signals being received on the terrestrial antenna. As to applicant's arguments regarding reduced cabling, as noted in the rejection, the examiner maintains that it would have been obvious to remove limitations from the claims in order to reduce cost. As to the specific wording used in cabling connection, it should be noted that specific inventive concept would not be changed by the description of the connections.

31. **Regarding the 35 USC 103 rejections**. Note that applicant's amendment and arguments rely on new matter added to the specification. However, the argued limitations have been addressed by the new reference by Du.

Conclusion

32. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

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Sievenpiper (US 2003/00174095) has been cited to show another teaching of a SDARS antenna being configured for direct and terrestrially repeated satellite signals, see figure 1.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

33. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Philip J Sobutka whose telephone number is 571-272-7887. The examiner can normally be reached on Monday - Friday, 8:30am - 5:00pm.

34. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew D. Anderson can be reached on 571-272-4177.

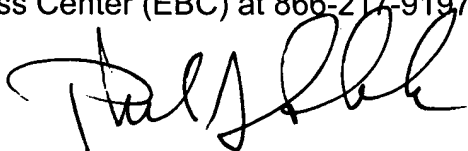
35. The central fax phone number for the Office is 571-273-8300.

Most facsimile-transmitted patent application related correspondence is required to be sent to the Central FAX Number.

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CENTRALIZED DELIVERY POLICY: For patent related correspondence, hand carry deliveries must be made to the Customer Service Window (now located at the Randolph Building, 401 Dulany Street, Alexandria, VA 22314), and facsimile transmissions must be sent to the Central FAX number, unless an exception applies. For example, if the examiner has rejected claims in a regular U.S. patent application, and the reply to the examiner's Office action is desired to be transmitted by facsimile rather than mailed, the reply must be sent to the Central FAX Number.

36. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



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